

Curriculum Vitae

TANG, TONG

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Department of Computer

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EDUCATION BACKGROUND

- **Beijing University of Technology (BJUT)** 2017.09 - 2021.07
 - **Major:** Information Security
 - Degree: Bachelor of Engineering - Accumulative **GPA:** 3.87/4.0 **WAM:** 92.14% (**Rank:** 1/223)
 - Core Courses: *Discrete Mathematics, Probability and Statistics, Mathematical foundation of information security, Algorithm and Data Structure, C-Programming, Principles of Computer Organization, Computer Network, Information Security Architecture, Cryptography* etc.
 - **Awards:** Academic Excellence Awards of Beijing University of Technology (2017 - 2021)
 - Excellent Diploma Thesis of Beijing University of Technology (3 theses selected from the Department of Computer) (2021)
 - Outstanding Diploma Thesis of Beijing (2021)
 - Merit Student of BJUT (2018, 2019, 2020)
 - Excellent Prize of National College Students Information Security Competition (2019, 2020)
 - **Minor:** Finance
 - Degree: Bachelor of Management - Accumulative **GPA:** 3.75/4.0 **WAM:** 87.25%
- **University College London (UCL)** 2021.09 - 2022.09 (Expected)
 - Department: Computer Science
 - Current year 1 taught postgraduate student majoring in Information Security

PUBLICATION

- Yingxu Lai, Liyao Tong, Jing Liu, Yipeng Wang, **Tong Tang**, Zijian Zhao, Hua Qin. *Identifying Malicious Nodes in Wireless Sensor Networks Based on Correlation Detection*. Accepted at *Computers & Security*, 2021.
- **Tong Tang**, Yingxu Lai, Yipeng Wang. *Relational reasoning-based approach for network protocol reverse engineering*. Under review for *Computer Networks*, 2021.

PATENT

- Jing Liu, Changbo Yuan, Yingxu Lai, **Tong Tang**, Qian Su, Zijian Zhao, Defan Xue. *A Method based on Cloud-fog Collaboration for Industrial Internet Sensitive Data Protection*. Published in 2019, CN110210237A.
- **Tong Tang**, Yipeng Wang, Yingxu Lai. *A method and system for automated inference of protocol formats based on relational reasoning*. Under reviewing.

ACADEMIC EXPERIENCE

2020.12-2021.09 **Relational reasoning-based approach for network protocol reverse engineering**

- Proposed RelaNet, a novel relational reasoning-based method for network protocol reverse engineering.
- It is based on the key insight that n -grams of packets have context relations
- Implemented RelaNet and evaluate it on two publicly available datasets, the experimental results demonstrate the effectiveness and efficiency of RelaNet
- Compared RelaNet with two state-of-the-art methods, and the results show that our approach outperforms those methods

2020.02-2020.10 **Identifying malicious nodes in wireless sensor networks (WSN) based on correlation detection**

- Identified malicious nodes based on correlation theory to solve the problem of collusion attacks in WSN
- Used the second-order dispersion differential filter to obtain a time series of abnormal conditions of each sensor based on temporal correlation, distinguished malicious and faulty nodes based on spatial correlation, and finally validated the malicious nodes based on event correlation

2019.03-2019.10 **Ministry of Industry and Information Technology 2018 Industrial Internet Innovation Development Project**

- Innovations: used the industrial data protection scheme of Cloud and Fog Collaboration, quickly disturbed sensitive data based on the improved RAPPOR algorithm of localized differential privacy, sacrificed accuracy to reduce the CPU ratio of the algorithm within the allowable range
- Challenges: the complexity of Google's RAPPOR algorithm and the lack of relevant literature
- Contributions: studied RAPPOR and proposed improvements, applied Adaboost algorithm to the model as well as wrote documents and drew drawings

EXTRACURRICULAR ACTIVITIES

2019.07-2019.08 **Volunteer of International Voluntary Workcamp "HOPESHINE"**

- Communicated with disabled children and knew the local facilities and equipment on the territory of Special School N 14 for children with visual impairments
- Obtained Certificate of Appreciation of HUI Board, Special School N 14

INTERSHIP EXPERIENCE

2021.2-2021.8 **HPCAI Research Engineer of THeWake Systems Ltd.**

- Deep learning framework (Pytorch, Paddle) operator researching and coding
- Pytorch, Tensorflow, etc. Deep learning framework compiling on ARM based chip
- Face recognition algorithm speed up on ARM based chip

PERSONAL SKILLS & HOBBIES

Technical Skills:

- English Proficiency: IELTS 6.5
- Programming Skills: Python, C/C++, MATLAB, Assembly Language, L^AT_EX
- Software & System: Sublime Text, Pycharm, Vim, IDA Pro, Linux, Pytorch, SQL, GNS3, etc.

Hobbies:

- Being fond of jogging, swimming, Sudoku and playing the basketball
- Being Familiar with Router, Switch Configuration and Document writing